

CLAIMS

1. (Previously Presented) A method of distributing timing information across a packet network, the method comprising:
at a master component, generating timing signal packets containing timing signals at predictable intervals using a clock reference of a given frequency, and broadcasting or multicasting the timing signal packets to a plurality of client components over said packet network, preserving the timing signal packet intervals; and
at each said client component, receiving said timing signal packets and determining the intervals between successive packets, applying a clock recovery algorithm to said determined intervals to recover in substantially real time the original clock frequency, and synchronizing the frequency of a local clock of the client component to the recovered frequency.
2. (Original) A method according to claim 1, the method being used to distribute timing information between various components of a telecommunication system coupled together via a packet network.
3. (Original) A method according to claim 2, wherein said components include one or more components coupled to TDM networks/links.
4. (Original) A method according to claim 1, wherein one or more of the components is coupled to a T1 or E1, T3 or E3, SONET or SDH link, performing a data conversion function between the T1 or E1, T3 or E3, SONET or SDH data format and the packet network data format.
5. (Original) A method according to claim 1, the packet network providing a backplane of a telecommunications gateway.

6. (Previously Presented) A method according to claim 1 and comprising including in said packets, a priority marker, and upon recognition of such packets at routers/switches of the packet network, forwarding them with the highest possible priority.

7. (Previously Presented) An apparatus for enabling the operating clock frequencies of a plurality of components, coupled to a packet network, to be synchronized to the clock frequency of a master component also coupled to the packet network, the apparatus comprising:

means at the master component for receiving or generating a clock signal having a clock frequency, and for generating from said clock signal, timing signal packets containing timing signals at predictable intervals;

means at the master component for broadcasting or multicasting the timing signal packets to a plurality of client components over said packet network, preserving the timing signal intervals; and

means at each said client component for receiving said timing signal packets and determining the intervals between successive packets, for applying a clock recovery algorithm to said determined intervals to recover in substantially real time the original clock frequency, and for synchronizing the local clock frequency of the client component to the recovered clock frequency.

8. (Previously Presented) A gateway of a telecommunications network, the gateway comprising:

a plurality of components each operating at a local clock frequency, one of the components, the master component, generating or receiving a reference clock signal having a given frequency; and

a packet network backplane for communicating packet data between said components,

the master component having means for generating from said clock reference a stream of timing signal packets containing timing signals at predictable intervals, and

means for broadcasting or multicasting said timing signal packets, preserving the timing signal packet intervals, to other components operating at said local clock frequencies via said packet network backplane, and the receiving components having means for synchronizing their local clock frequencies to said reference clock frequency by analyzing the intervals between received timing signal packets.

9. (Original) A gateway according to claim 8, wherein at least one of said components is a TDM line card, coupled in use to a TDM link.

10. (Original) A gateway according to claim 9, wherein at least one of the components is be a TDM line card coupled to a T1 or E1 link whilst at least one other component is a TDM line card coupled to a T3, E3, SONET or SDH link, the gateway performing up and down conversions for data received and sent via the links.